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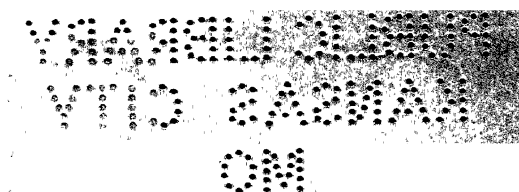
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KANSAS CITY
TEXT BOOK

—OF—

CHINA PAINTING

BEING A COMPLETE ENCYCLOPAEDIA OF ALL METHODS OF DECORATING CHINA AND FIRING. ALSO, NOTES CONCERNING WHAT SHOULD BE AVOIDED BY THE BEGINNER IN ORDER TO BECOME SUCCESSFUL.

—BY—

Mrs. W. H. MILLER, Jr.

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KANSAS CITY

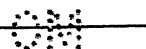
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WILSON

ORIGIN OF POTTERY.

The production of pottery takes its rise from a date which in the Eastern Hemisphere is lost in the darkness of remote antiquity. The Ceramic art, both in its theory and in its practice, unites a combination of qualities unknown in any other expression of human skill and embracing every species of form, from the classic severity of the early Greek period, to the florid luxuriance of the wares of Saxony, France and England. A material which presents a most lustrous surface, solid, imperishable and admirably qualified for the application of brilliant colors, and which offers such inducements to the painter for the practice of his art, that the pencil of the glorious Raffaele himself was occasionally employed in its decoration. The term pottery is derived from the Latin "Pottorium." The Word "Ceramic" is derived from the Greek. Ceramic is from "Keramicus," the name given a quarter in Athens devoted to the manufacture of brick and tile. The first European who, is recorded to have penetrated into China and to have explored Chinese productions on their own soil, was the Venetian Marco Polo, who makes record of same in the thirteenth century. The Chinese guarded the secret of making china very zealously and told travelers that the clay was mined and stored in great heaps exposed to the sun, wind, and rain for forty years before being fit for use. Other stories were that china was made from Marine shells, egg shells, gypsum, and other strange substances that were buried for one hundred years before fit for use. Among the notable names made possible by being identified with china were those of Bernard Palissy and who in 1550 discovered the enamels which enabled him to execute the remarkable Ceramic works that are identified with his name. In England, Josiah Wedgewood was the famous genius who founded the potting industry. He laid out and gave the name of Etruria to the town that was and is still the center of the potting industry. In 1763 Wedgewood presented Queen Charlotte with a table service in what subsequently became known, and is still known as "Queen's Ware." Finally the French Jesuit missionary, D'Entrecalles gained entrance to a Chinese factory and saw the ware made and forwarded the full particulars to Paris in 1712 and a series of experiments by Reumer resulted in the finding of suitable clay in France and the production of the fine porcelains of Severs. Records have been found in China that they manufactured it 4,632 years ago. From China to France and also into Egypt, Assyria, Greece, Rome, Babylonia, Etruria, Italy, Tuscany, Gaul, and on down through England, Germany and America has porcelain and china steadily wended its way for thousands of years, always attracting the attention and holding the support and co-operation of most of the noted personages identified with the history of every land. Catherine de Medici gave to it the name of "Fayence" and the name is still used by the French.

In Germany, Bottcher was an apothecary's assistant of Berlin and in 1709 procured a true white porcelain and it was made in secret at Meissen until at last some of the workmen escaped from their imprisonment and then the secret spread and other factories were started at other cities.

Having outlined in a brief manner a few notes concerning the history of china, I will pass on to that which is of more vital interest to us, "the art of decorating the china." The first known color was blue made of Cobalt used by the Chinese and as time went on and other nations became interested in the decorations, they made Greens of Chromium and Copper, Yellows of Uranium, Rubies of Gold, Pinks and Violets of Gold and Silver, and so on through hundreds of various colors. The history of painting on china is nearly as extended as the making of the china and space will not permit of any mention except the fact that it received the largest attention.

TRANSFERS. OUTLINE DESIGNS.

in 'America at the close of the Centennial Exposition in Philadelphia in 1876 with French and German imported colors mixed and imported ready to use. This method of buying colors soon proved distasteful to the American painter and then began the importing and bottling the dry powdered color and mixing as needed. The price put on the first colors were from 20 to 85 cents for a dram bottle and those engaged in the traffic made immense fortunes and many retired. Only during the past four years has it been possible to secure high grade, standard, guaranteed, European colors at a popular price and has been made possible by an European firm known as the Anglo-French Art Co., establishing houses in America and importing direct from the color mills of Europe and selling direct to the American consumer at popular prices of 12 to 25 cents per bottle. This method of selling dependable, guaranteed colors has brought back to the ranks of china painters thousands who had discontinued the art on account of the high and unreasonable prices, and many other thousands have been able to take up the art for pleasure and profit because of the popular prices.

I will conclude with a few brief remarks about present day decorations. The most simple and easiest method is by means of transfers or decalcomania, the most exquisite and appropriate designs by such well known European artists as Katherine Klein and others have been adapted to and made especially for various shapes of china. These designs are printed on a special paper with the ceramic color and the designs are transferred onto the china in a very simple manner and which consists of smearing oil on the china exactly where the design is wanted and patting the oil until it becomes tacky, then having carefully trimmed the transfer and decided just how you want it laid on the china it is laid face down on the sticky oil and then with a wet rag press each part down firmly and when it is all pressed on smooth, the china is then immersed in water and the paper soon soaks loose and floats off, leaving the color adhering to the oil on the china, then with a DRY rag, all wrinkles and loose parts are pressed down firmly and the china set aside to dry and it is then fired, and after being fired any addition to the design may be painted on with colors to match those used in the design and also any parts that may be lacking, or ragged, or did not glaze sufficiently may be gone over, and also backgrounds and tints may be painted on that portion of the china not covered by the design. The next easiest way to produce hand painted china is to select a study made especially for the purpose and printed on ordinary paper in outline, the studies are usually one section of a design and if to be put on a plate the section may be repeated as many times as required to cover the plate, and the manner of reproducing the design on the plate, or any piece of china, is to lay a piece of graphite paper face down on the china and on top of this lay the study face up, and exactly where you want it to appear on the china, then fasten the graphite paper and the study securely to the china with either wax fastener or gum tape to keep the papers from moving, and then with a specially made steel tracing point you go carefully over the lines of the printed study and same will be traced through the graphite paper and on the china. Next if you want the design outlined in black you take outlining black (or any color) and mix stiff with medium and then add sufficient pen medium to thin it so it will flow from a crowquill pen and with the pen go over the design on the China and outline, then fire, then fill in the various colors, tints and backgrounds as explained in the treatment that comes with the study.

The above simple systems of china painting are for those desiring quick and satisfactory results at small expense. Other methods consist of learning to draw directly upon the china and more thoroughly learning the work that it may be followed as a profession or as a vocation for life and to pursue such a course you should study with the very best of teachers and the wisest plan is to stay with one teacher only long enough to secure the knowledge she is able to impart and then pass to another and so on until you have gained a large fund of practice and information and through it all you should be careful to maintain a personality strictly your own and in the end be able to originate and preserve a style that will perpetuate your name.

CHINA PAINTING.

The art of china painting is one of the most fascinating studies, and not only as an agreeable pastime, but a profitable one as well. One need not necessarily be able to draw to decorate china, as a design of any kind can be taken from a study, and by means of tracing paper and graphite paper made especially for china, transfer the design to china. A plate or plaque is the best article for a beginner. Many people have been led to believe that colors for this work will not mix with each other, but this is a mistake; one can mix them as they do water colors or oil paints. A steel palette knife, too, is all that is necessary.

Powder Colors should be thoroughly mixed with a moderate quantity of Painting Medium. Use sufficient to form a paste and enough Turpentine to make the color flow. When mixed, breathe on it sufficiently to prevent it from spreading, and put it on the palette in the smallest compass possible, in order to keep it longer in good condition. After breathing on the color do not mix it more than is necessary, or the moisture will evaporate and the color will return to its running state. This condition proves a great annoyance to the painter.

It is very important to breathe on the color, as the moisture from the breath prevents it from spreading. If the color flows on the palette, it will likewise flow on the china, and will settle around particles of dust or lint that may be there, or in the colors, and when fired the work will be covered with spots of paint, which will give it a woolly or rough appearance.

Get a palette that has a cover so the colors may be kept free from dust and lint.

Do not use too much oil, as it will blister when fired. Oil of lavender is used to moisten the colors after they have become too dry to work with on the palette. Wash your brushes when changing from one color to another. Have a small dish or glass with an ounce or so of turpentine, another one containing a very little medium. Now dip the brush in the turpentine, shaking it a little, wipe on your rag by dragging over it about twice, now dip the tip end in the medium, wipe again and you are ready to paint. Brushes should not be too small. Place each stroke where it should go and do not work over it as it will spoil the effect.

In mixing tints for a large surface, it is necessary to use more oil than for other painting. Take a broad, flat tinting brush, charge it well with color, and go over the surface to be tinted very rapidly. When it has been covered, take your pad and blend all smoothly.

When dark grounds are desired, the colors are grounded or dusted on.

Have the best brushes and have enough, numbers two, six, eight, and ten in the square shaders, and one red sable liner number 0, a half-inch tinting brush and number one, three and five short painting.

Dip the brush in the turpentine then wipe lightly on the rag which should be folded to about 6x8 and partly slipped under the left hand side of the palette, then dip in the medium and work off the superfluous oil just so the bristles hold together and are pliable. For tinting paint the color on smoothly then pat down with a pad made by putting a wad of cotton in a piece of white silk, that will not shed lint. This can be cleaned by first soaking it in turpentine then washing out with soap and warm water; it must then be ironed smooth as the least wrinkle will show in the tint.

DIRECTIONS FOR PAINTING.

If you have a study you wish to copy on a piece of china and if you are unable to draw it directly on the ware get a tracing or outline of it on a piece of tracing paper, fasten this in the position you desire by means of

HOW TO APPLY THE COLOR.

fastening wax or tape. Now slip a piece of graphite paper, made especially for this purpose under it and trace the design through, using a steel tracing point and after tracing remove the paper. Now take a crow quill pen and with India ink go over the entire design with fine outline and if you are working on a conventional design it is well to use the different colors of India ink because you can designate where the different china colors should go by the color of ink. After you have sketched your design in ink then dampen a rag with turpentine and wipe the marks from the graphite paper off.

Take up the local color for a leaf or a petal and lay it on as quickly as possible. Then flatten the brush on the palette, and sweep over the part just painted as lightly as possible, being sure it is perfectly smooth before leaving it. When the color is applied thick use less oil to avoid spotting.

Keep the stroke of the brush in the direction of the fibres, and from light to dark, or where the shadows will be finally. By so doing, the local color will be thick where the shadows are to come, and thin in the light parts. The first painting being finished the darkest shadows will be suggested. If the lights are not clear enough, moisten the brush slightly in oil and wipe them out. Never paint thick dark colors for the first firing, as there is plenty of opportunity to strengthen them in the second firing.

Do not attempt any shadows in the first painting. Keep the color clear and transparent, otherwise the work will become muddy and it will be impossible to make it fresh and clear.

If the piece is to be finished in two firings, it is necessary to put in the background in the first painting.

For large pieces, it is better to fire three times or more, in order in the second painting to soften the work into the background by sweeping the color over the shadow parts.

Suggest flowers and foliage by modeling them out of the wet background. Careful attention must be given to the effect of light and shade.

If the background is not so smooth as desired, soften it down with a pad and then with a clean brush remove the color from any lights that you wish to retain.

Strengthen the shadow parts of the first painting. If they are not dark enough, allow the piece to stand till almost dry, and then dust it with dry powder color.

Dry dusting is a form of ground laying and is used to obtain dark effects, also to blend the design into the background.

DIRECTIONS FOR DRY DUSTING.

On a large tray place the dry powder colors, keeping them separate. With a small wad of cotton or a medium size camel's hair brush, take up the desired color and pass over the parts to be strengthened.

A little fresh green may be used effectively over green leaves, and a spot of yellow or orange may be introduced in places. When all the places that are to be intensified have been dusted a little Ivory Glaze may be used on the other parts, so as to effectively blend them. Do not allow the Ivory Glaze to come in contact with Rose, Ruby or Red, as Ivory Glaze is practically Flux, and is liable to turn Rose and Ruby bluish and destroy Red.

After all the dusting is done a large, soft brush should be used to take off any superfluous color. The piece is now ready for a second firing.

For the third painting put in the shadows and strengthen and accent where necessary.

If you wish to blend your design into the background as well as give the work a higher glaze use the different glazes. For grapes, violets and other effects in these tones dust with Lavender Glaze, use Ivory Glaze over light greens, light browns and anywhere where you wish to merge one color

into another, except as above mentioned. Grey Green Glaze is fine to use over greens, browns and into the greys. Azure Glaze is used in connection with blues. Any of the colors may be used for dusting and are most effective to produce very dark, deep shadows.

Brush off all superfluous color with a soft brush or a wad of cotton. If the surface looks oily or spotted, apply more color. If any color is to be removed, it must be done at once with the end of a pointed stick.

DIRECTIONS FOR TINTING.

The paints should be mixed with tinting oil or the medium a little thinner than for painting. If an even tint is desired, the paint should be laid on evenly with a large brush then padded smooth and free from blotches.

To make a pad take a piece of silk, white, and preferably rather heavy, an old silk handkerchief will do nicely, put a piece of cotton about the size of a hickory nut for ordinary tinting and for small spaces, a smaller piece should be used, in it and make a pad, then put a very little oil on the surface, then dab it all over the paint until smooth.

Apply the paint very smoothly over the surface to be tinted but not very heavy, then before it has time to dry pad it until perfectly smooth.

If a graduated tint from dark to light is desired the paints should be laid on correspondingly but not extended as far as the lightest shade is intended to go, then commence padding where the color is the thinnest and with the color thus collected on the silk; pad as far as the tint is to extend, then gradually work from light to dark. Rub a little of the oil on the silk pad before beginning the work.

DIRECTIONS FOR GROUND LAYING OR FOR DUSTING ON GROUNDS.

Cover the surface to be tinted with Grounding Oil, holding the china towards the light, to see if it is evenly distributed. If a heavy ground is desired, use the oil full strength, and pounce lightly; for a delicate tint, add very little turpentine to the oil, and mix well. In either case, the surface should be perfectly even and smooth, which can only be secured by the judicious use of the dabber. The oil is a quick dryer, and becomes tacky at once and ready for the color, which is taken up in quantity with the palette knife and placed at one side of the oiled surface (never sprinkle it on), then with a broad flat brush gently sweep the color over the china, continuing this method till the oil will not absorb any more color; this can be determined by the surface; if dark spots appear, after standing a few minutes, add more color; repeating this process until a soft, dry tint remains; brush off the surplus particles of color, and the china is ready for firing. With a sharp-pointed stick you can trace designs upon the tinted surface, outline the white scrolls with paste or enamel, beautiful and new effects are produced in this way.

Gold paste and enamel cannot be worked over ground-laid color, either fired or unfired, so that the color will have to be wiped out wherever a design of this kind is to be used.

It is advisable in the case of delicate colors, such as rose for ground, turquoise blue, blue green, etc., to thin the oil considerably with turpentine, as the more the oil is thinned the less color it will hold and consequently the lighter the tint.

Now, if you want a design with a grounded background, draw in your design with India ink, with a crow quill pen, and proceed to work just as

SATIN FINISH COLORS GROUNDED ON.

described above, only you need not paint the oil in the design, and after you have the background all on, then you can see your drawing through your work; take a stomp and wipe out the design perfectly clean, and you will find these stomps very valuable in this work.

Have your work absolutely dry if you have to carry it away to be fired, because there is danger of rubbing if it is not dry.

If you use satin finish or Royal Worcester colors (pink, ivory, pale green, white, black, dark green, dark blue, pale blue, Torquay buff, ripe olive green, robin's egg blue and yellow green) in this manner, then have them fired, then put Anglo-French liquid bright gold over them. It will come out of the kiln with a Roman gold effect that cannot be told from the genuine Roman gold, and it will wear just as well. Handles and rims can be made in this way: Put the satin finish colors on for the first fire and the liquid gold for the second fire.

PASTE FOR RAISED GOLD.

Conventional work where relief gold is used is very attractive and with a little practice can be done by anyone. Get the paste for raised gold and mix it thoroughly with a little "Oil for raised paste," using two parts of the oil to four parts of the paste; mix it with a palette knife until it is a smooth paste, then add a very little turpentine. Take a small liner, either No. 0 or No. 1, insert the point underneath the paste, taking it out quickly and with an upward movement, and the paste will remain on the upper side of the brush; then outline with a clean, clear stroke. It is well to begin on simple effects and avoid raising the lines too high. If you will breathe on your paste it will make it work easier and stay where you put it better. Allow the work to dry gradually and thoroughly before firing, and if it chips off after firing you have possibly used too much oil or applied it over an oily surface. Now, there are two ways of applying the gold after the paste has been fired. If you wish to work the quickest way, then use the powdered gold. If the powdered gold is used, take your brush, dip it in your oil for raised paste and paint your work all over with it. Be sure that every part of the paste has been touched with the oil; allow it to stand a very few minutes, then wash the entire piece with soap and water and wipe dry; this will leave the white china perfectly clean and dry, but there will be enough of the oil remain in the porous paste to take up what gold is needed. Now, place your work on a clean, white paper—the smooth tracing paper is the best—so you will not waste any of your gold, and after you are certain that the china is dry, pour the powdered gold on the work and with a soft brush push it over until it has been over every part of the paste; now shake all the surplus off on your smooth paper, and if you find that there are any spots where the gold has not adhered, then put it on again, and with your soft, clean brush take all the powder off the white china. You will now find that the gold is only on the paste. Fire and burnish either with sand or with a glass brush.

If you wish to use the paste gold, mix it with turpentine or lavender oil, and with a fine liner or fine brush go over the entire design, being careful not to extend the gold out over the white china. Jewels used in connection with gold paste are pretty and they are made with the colored enamels. Enamel jewels are to be put on for the last fire, because they are liable to come off if fired more than once. Do not thin your gold, and apply it so thin that when it is fired you cannot see it, and if you burnish with sand use very little sand and have your rag very wet; burnish the same as you would if you were polishing a piece of fine silverware.

If your paste spreads from using too much oil, scrape it off and apply again, as it is very difficult to repair damages in this kind of work.

As the mixture dries out in using, it should be thinned with turpentine, and if there is a tendency to spread or to flatten out on the palette, this can be counteracted by breathing (not blowing) into it.

BURNISHING SAND.

DIRECTIONS.—Pour some sand into a saucer, and cover well with water. Saturate thoroughly in this a piece of soft cloth, allowing all the sand to adhere that will. Rub this over the gold gently, always being careful to keep the cloth very wet and not to rub too hard or too long in one place. When sufficiently polished, the article should be washed and dried. If desired, the gold may be further polished with a glass brush and you should use extreme care in handling a glass brush not to get the small particles of glass in your eyes.

MEDIUMS.

DIRECTIONS IN THE USE OF OILS AND MEDIUMS.—If you wish to make your own medium for powder colors use one drop of oil of cloves to six drops of Balsam copaiba.

It is not advisable to make your own oils and mediums, it is cheaper to buy them already prepared.

Grounding oil is used for dusting on powder colors by painting the oil evenly on the china and then covering with the dry color, shake off all surplus colors.

Dresden thick oil is used to mix powdered gold and silver. Oil for raised paste is used to mix paste for raised gold.

Thinning essence to thin lustres or Roman gold.

Acid resist is used in etching gold or silver.

Lavender oil is invaluable with Roman gold.

Tinting oil is used for light grounds which are afterwards to be blended.

Never use turpentine to clean the edge of lustres, use alcohol or water with a stick.

To make an even tint on a large surface use a little oil of lavender. keep it open until it is padded.

GOLD WORK.

For this work will be required a small palette, a fine brush or tracer, for fine lines, etc., a number four square shader for handles and flat surfaces, a small palette knife, two wide necked bottles, opening large enough to admit palette knife and brushes. These bottles should be used for turpentine and alcohol, and should be well corked when not in use. Do not allow the turpentine to stand long enough to become oily, as it will make the gold fat and cause it to spread over your china. Fresh, clean turpentine is a necessity.

Mix thoroughly with turpentine thin enough to flow from the brush, but not thin enough to spread. Among amateurs the idea is prevalent that in order to get a good coat of gold it is necessary to use the gold stiff, but stiff gold will not flow from the brush.

If the gold curdles, or does not mix readily with turpentine, add two or three drops of lavender or gold essence.

In filling the brush, which should be moderately full to the quill, be sure to work it thoroughly in the gold. Do not twist the brush to form a sharp point, as this empties the point of the brush. It is necessary to have a full brush and a light touch. When the gold becomes stiff on the palette, add a little turpentine and remix. If it clogs on the brush dip in the turpentine and again work the brush in the gold.

For solid work, such as handles, use a square shader of medium size. Keep the brush flat, and brush over the gold repeatedly until you have worked out all streaks or brush marks.

Two or three drops of liquid gold added to Roman gold will make it go farther and will spread more evenly. Do not use too much liquid gold or the gold may run and the edges become ragged.

For stippling have the gold stiff. Do not dip the stippler in turpentine, as it takes up too much and makes the gold too thin. Always wash the stippler in alcohol after using it.

Use Virgin Roman gold for white china and paste for raised gold. Hard or unfluxed gold should be used for working over color and on Belleek china. It may also be used for paste for raised gold.

Before you commence to gild remove all color and grease marks with a cloth.

Keep separate brushes for gold work.

It is generally advised not to wash gold brushes. If you remove all the gold you can by dipping the brush in turpentine and then working it out thoroughly on the palette there will be very little loss. Wash the brush in alcohol to prevent it from hardening. When a sediment has accumulated pour off the alcohol and allow sediment to dry, then remix with oil.

To put a band around a plate or saucer, or any similar article, dip the tip end of the fore finger in the gold and with a very little gold on it at one time draw it around on the china, which makes a much even line and more speedily done than with a brush.

Do not get too much on the finger, do it very daintily, apply the finger to the china, rubbing from right to left, back and forth until the edge is uniform in width and the gold is tacky. Do not bear on too hard. If it is applied too thickly it will scale off after firing. Be careful of finger marks after your work is done as well as before the gold is put on. Two coats are better than one.

Silver can be used in the same way as the gold, it is burnished the same way and prepared the same way.

LIQUID BRIGHT GOLD.

This fires very bright and it requires no burnishing. It is used very little, however, except as a first coat for Roman gold, where a large surface is to be covered and where the only advantage is its cheapness, for it will not wear well, because it has but little gold metal in its composition. In covering large surfaces with gold, a small quantity of Bright Gold mixed with Roman gold will be found more economical, as it flows easily and enables one to spread it on evenly and cover a larger surface with the same amount of gold. After this is fired it should be given a coat of pure Roman gold.

Liquid bright gold may be used on tinted backgrounds of color that have been fired. When applying it to white china clean off all the grease marks as for lustre and Roman gold. If you wish to remove any part of the gold design be sure it is wiped out clean, as all stains will fire purple. If Bright Gold becomes too thick for use, thin it with gold essence.

Liquid bright gold may be applied over backgrounds of matt color, providing that they have been first fired.

Let the decorated article be perfectly dry before firing.

For firing observe that the heat increases gradually. Leave the muffle open long enough at the beginning to permit the escape of the vapor arising from the gold and colors. After all the vapor has escaped from the muffle close it, and gradually increase the firing until it becomes a light red heat.

After firing, let the ware cool off in the muffle before removing it.

FIRING.

A kiln is the best investment a decorator can make, if constant work and experimenting are to be pursued. The advantage in owning a kiln is that after becoming familiar with it one can judge results very nearly accurate and can work with a definite plan, knowing just where to place certain wares that are decorated with this or particular color or enamel. Then again it is a satisfaction to be able to fire ones own ware as often as is necessary or as is desired, without the trouble and expense of taking elsewhere, where perhaps they will not get the desired heat.

As to the best kind of a kiln to buy I will say positively that it is a mere matter of fancy and to prove this will say that if you were to go into Russia you would find them firing in kilns heated with wood and makers of colors produce them to fuse at a low temperature especially for the Russians, next go into France and you find them using charcoal kilns, then in Germany they use coal oil, in England they use gas and coal.

Some use iron muffles, others use fire-clay muffles and all get about the same results and it is therefor a mere matter of price and the style of kiln that may please you best.

"CLEANO" IS FINE FOR CLEANING UP CHINA.

Remove all spots or blemishes that are on the china such as finger marks, price tags or marks, blow off all superfluous particles of color that has been dusted on. "Cleans" is fine for cleaning on china.

Gold will turn dark and rub off if underfired.

Raised paste and enamel should look dull before putting in the kiln.

Carmines require a hard fire, so do the blues, iron reds need a lighter fire, and the gold colors need a hard fire.

Decorators have employed various means to determine when their kilns are fired up; but, while their efforts have been more or less successful, their methods left room for improvement. The solution of this problem lies in the use of "Pyrometric Cones."

These cones, which are absolutely reliable, being made by expert ceramists, partially melt and bend over when the temperature reaches a certain point.

When placing Belleek for firing, the glazed parts must not come in contact with anything else in the kiln, as it would inevitably stick wherever it touched.

To avoid all danger of shattering during the firing, care must be taken that pieces with large, flat bases do not rest directly on the bottom of the kiln, or on flat bats; such pieces should be raised by means of fireclay pins placed under the foot of the ware, permitting the free circulation of heat and if a razzo board be laid on bottom of kiln and large pieces set on the razzo board it will cause the bottom to heat more slowly and lessen the danger of cracking or shattering.

USING CONES.

The cones must be placed in various parts of the kiln, where they can be seen through the spyholes. When the kiln is ready for firing turn on the heat slowly at first to evaporate all the oil and until every bit of moisture is out of the kiln. Do not hurry the firing, the heat should be applied grad-

ually until the cone bends over, then shut off the heat and better shut it off about one-fourth at first, then in a few minutes turn a little more off, etc. On no account must the kiln be opened while there is any appearance of red heat and china should not be taken out until cool enough to handle with bare hands.

China can be repaired in an ordinary kiln, it should first be cemented with a cement especially prepared for that purpose, then tied with asbestos twine to prevent it slipping in the firing.

DIRECTIONS FOR USING VITRIFIABLE CEMENT.

The china should be cleaned with "Cleano" especially the broken edges. Mix the cement with water or mucilage to the consistency of cream and apply to the edges that are to be joined.

In placing the broken pieces together extreme care should be taken to get them exactly in their original position, otherwise the joint will be imperfect. Sometimes the article can be so placed in the kiln as to overcome a tendency to fall apart of its own weight. Usually, however, it must be tied together with asbestos cord. Place in the coolest part of the kiln.

Kilns should be kept white on the inside by giving them a coat of "kiln glaze" and firing it on at an extra high heat with nothing in the kiln. Cracks in a kiln pot may be filled with "kiln paste" and fired the same way.

DIRECTIONS FOR THE USE OF LUSTRES.

The lustres are generally used directly from the vial in which they are put up. The greatest care is necessary in the use of them or disappointment will be the result. It is most essential that absolute cleanliness should be observed. If possible, a separate brush should be used for each lustre, with the name of the color carefully marked on it. However, if it be necessary to use the same brush for different lustres, we advise washing it thoroughly in essence or alcohol at each change. An ordinary square camel-hair shader is the best for this use, the size varying with the work in hand.

If an even tint is required, the lustre must be applied and padded quickly, as it dries very rapidly. It can be kept open longer by adding essence, but this, of course, makes it thinner, and is not advisable unless a pale tint is desired.

When darker colors are used an even tint can be obtained without padding by repeated applications. Usually two or three are sufficient, the article being fired each time another coat of lustre is added.

Fine effects can be obtained by using one color over another and also by using them over Roman gold and liquid bright gold, also in combination with paste and enamel.

When used on French china, they must be fired at a high temperature and are improved by repeated hard fires.

On Belleek very careful firing is necessary, as too strong a heat will cause them to sink into the glaze and to lose their brilliancy.

Never clean the edge of lustre before firing with anything but alcohol, as turpentine will creep and ruin the lustre.

Dry the lustres immediately after they are placed on the china in an oven and manage your work so it will avoid dust, as every particle that settles on it will show tenfold after firing.

Have the bottles in a box, or in some other way, very firm so they will not tip over. Use a large flat brush for large surfaces and it must be done

very quickly and smoothly. When dried and cool wrap the china in tissue paper and have fired as soon as possible. Use perfectly clean brushes and after finishing for the day clean them thoroughly with soap and water and alcohol. Wet brushes will change the color of lustres.

Opal lustre is one of the best wearing colors if used thin.

In covering large surfaces with lustre, use a square shader of medium size or a flat Russia sable brush. Apply the lustre evenly and get over the surface as quickly as possible, having a silk dabber in readiness to pounce the surface until it is even and almost dry. It is necessary to work quickly as the lustre dries rapidly. Opal and mother of pearl lustres are best when not pounced.

While applying and drying lustre decorations, use the greatest care to avoid dust, as it will cause a spotted appearance after firing.

In firing lustres special care should be taken to see that the work is dry before placing it in the kiln. The kiln must be perfectly sound and dry and the firing must proceed slowly at first, so that the oils may be driven off gently and to allow all fumes and gases to escape as they are very injurious and may cause the lustre to come out dull and without adhesion.

Too rapid heating up of the kiln may cause the lustre to scale or peel off.

Should the lustres come out unsatisfactory, their tone may be changed and often serious defects can be remedied by covering with mother of pearl and again firing. Mother of pearl is a valuable lustre as a covering for most of the lustres which should be already fired. It will give beautiful iridescence and warm tones.

In case any article receives other decorations it is advisable to apply and fire the lustre decoration last of all, but lustres can easily stand several firings, providing the kiln is sound and affords a ready exit for the gases that are formed in firing.

Gold and enamels or raised paste can be used over fired lustres. Raised paste can be used over unfired lustres if desired.

Blemishes in lustre can sometimes be covered by tracing fine lines of Roman gold over the surface. Raised gold work is very effective for outlining lustre designs. Lustres fired over burnished gold give very artistic effects and greatly enhances the value of the work. Green, yellow, brown, blue, violet and ruby are the shades mostly used over gold.

Lustres are best adapted for decorative effect, such as bands, borders or linings, such as the inside of cups, bowls, etc. The best shades for linings are ivory, old ivory, yellow, light shammy, light green, opal and mother of pearl.

Poster work is very effective in lustres and they are suitable in all conventional work.

China with an irregular or uneven surface is best adapted for lustre decoration, especially where large surfaces are covered with lustre, as it gives a greater iridescent effect and adds to the beauty of the work.

When lustre rests in crevices heavily they will not glaze like a color, but peels off like flour, leaving white china.

To get dark metallic effects in lustres you must rely on two or three fires; dark green, light green or yellow over purple, black or ruby will produce most of the iridescent colors. To get a bronze effect, the lustre is used over fired and burnished gold.

Never use turpentine with lustres or near them, as it will ruin their color.

Lustres over fired gold make the most charming combinations and used over fired matt colors produce metal effects.

When ruby or orange has a tendency to rub off in the firing coat them over with a thin application of yellow which will fix them and not change the color.

Yellow Lustre padded makes a delicate yellow tint, several times makes a deep iridescent yellow with pearly effects. Over rose which has been fired is a mother of pearl, over steel blue is an oxydized silver. Ordinary fire.

Orange over green gives a yellow tone, over ruby and purple a beautiful iridescent color. Ordinary fire.

SOME LUSTRE COMBINATIONS.

Gold lustre is used as a first color coat under a burnish gold; it saves gold and makes a rich effect. The covering for gold is effective as are also green and ruby. Rose color fire.

Light green lustre will look yellowish if too thin.

Silver lustre is opaque and can be used over a bad piece of painting to cover defects. Green, ruby and violet are pretty over silver.

Light green tinted is a green grey. It is most beautiful when it has had several coats. When green gold, bronze, or silver is used over it, a lovely pink flush is sometimes cast over it. It makes a nice combination over rose, ruby, purple, silver and orange.

Dark green is a blue green and makes a fine, rich combination over ruby, purple and silver. Over a ground of burnish gold it makes a rich iridescent green bronze effect.

Iridescent Rose is a bluish green with a rose lustre, and is one of the hardest lustres to handle satisfactorily as it is so liable to spot. Strong fire.

Purple has a gold lustre when used heavily and is beautiful if used under dark green. It is also a hard color to handle properly.

Orange must be used carefully as it sometimes rubs off; used over ruby it makes a rich scarlet and over green and blue it makes a beautiful olive.

Brown is useful for neutral tones in conventional work and for flesh tones in lustre figure work.

Steel Blue is very dark and rich with blue, green and ruby tones. Padded it is a fine steel grey good for back grounds with a second coat of dark green.

Steel, black, silver, platinum, gold and copper are all opaque lustres and if a piece of china has been spoiled and it is too large and too much trouble to take the paint off with acid, these lustres can be used in a conventional design and hide the original design.

For other combinations read "Lustre Book," price 10c, by Anglo-French Art Co., Chicago or Kansas City, Mo.

DIRECTIONS FOR USE OF ENAMELS.

ENAMEL JEWELRY.—Artists who have attempted a decorative scheme of enamel dots find they have several difficulties to overcome before they can obtain complete satisfaction. If turpentine is used as the medium, gradual evaporation makes it almost impossible to get the dots of even size. If fat oil is added, blisters are inevitable; the enamels are liable to get "fatty" and blister from the constant addition of turpentine.

I found a remedy for these troubles in a combination of oils, the use of which kept the enamels open and prevented blistering and is known as enamel mixing oil.

After all the design is sketched on, grind down your outlining color or gold, with a little medium and then thin with the pen medium, until it drops easily from the outlining pen. Test your lines. If paint does not flow readily, add more pen medium; if it looks weak, or spreads, add a little more color. When it makes a fine, clean-cut line, not so fine as to be wavering and weak, then it is all right. Outline the entire design and then fire it.

Grind down the enamel you are to use with just enough enamel mixing oil to make it cling together, then add turpentine and grind again. A small amount can easily be reduced to smoothness with a palette knife, but for a large amount a glass muller does the work more thoroughly and quickly. It must be thin enough to spread slowly after you have it placed in a compact mass. Use a long fine enamel brush. Dip up a small portion on the tip of the long brush, deposit it on the petal or leaf it is designed for, gently and quickly drag it over the surface until all of the petal is covered with a smooth enamel, very low. As it dries it will lie dull and almost as flat as paint, and showing no brush marks.

All powder enamels must be ground down with a small quantity of enamel mixing oil first and then turpentine only, nothing else. If for any

reason the hard glaze china should require another fire after the enamels have been fired, while there is always more or less risk, this risk will be reduced if you wash over all the fired enamels with equal parts of lavender oil and turpentine, using a large brush—No. 4 pointed shader will do. Do not attempt this on unfired enamels. On soft glaze ware—such as Japanese Satsuma—the enamels will stand several firings and each firing will add to the beauty.

For years artists have tried to color their own enamels and always with more or less disappointment and failures, but now you can buy all the shades in ready mixed enamels and with guaranteed success. They are used by the noted enamel artists who have thoroughly tested them and use no others. They come in two kinds, one for the hard glaze china, requiring a hard fire, another for Satsuma and soft ware, requiring a light fire. Mulberry purple, Wistaria violet and Japanese scarlet are all beautiful colors and by mixing these with white you can get all the shades. Venetian blue and Turquoise blue enamel are two exquisite blues, one light and the other dark.

It is well to buy your enamels of Anglo-French Art Co. of Chicago or Kansas City, Mo., because theirs are the best on the market.

If a shaded flower is desired, there are two ways in which this can be done—shading the enamel when dry with a thin wash of paint, or blending two tones of enamel. The latter is the best for one who is studying this work without an instructor.

Prepare your two shades of enamel. Have them alike as to quality, thinning both with turpentine to as near the same consistency as possible. Commence with the lightest. Lay it on the portion of petal you wish the lightest at once, lay the darker shade on the other part, dragging the two shades together. This requires practice, but can be done smoothly and perfectly.

HOW TO USE RUBBER STAMP INITIALS AND CONVENTIONAL DESIGNS.

The rubber design for decorating china is used all over Europe by all of the decorators who wish to do a number of pieces exactly alike, and the method of using is to mix up the color rather stiff and then with a flat knife draw the color out thin and even and about as thick as a heavy piece of paper, it is best done on a piece of glass, and near one side of the flat glass. Now take the stamp and press onto the color, being careful that it is done evenly, so that the color will be even on the stamp, and then press the stamp onto the china where you want the design, and being careful to give an even, steady pressure and to remove stamp from the china with a quick, upward movement, so as not to blur the design. Much depends on the pressure you give the stamp onto the china, and the way the color is prepared, but practice will soon enable you to stamp the design on clearly and evenly, and if you want the design all around a piece of china it is necessary to repeat the design so they will come together where you wish.

These designs may be stamped on, and any part not wanted removed with a stomp, and outline designs may be stamped on and fired and the open spaces filled in with a different color.

If the designs or initials are desired in gold or silver you may prepare the same as you would color, and proceed the same.

TRANSFERS ON CHINA.

You can also get beautiful results for artistic vases, plates, and other pieces of china, by the use of high grade transfers. These transfers are designed by the finest artists in the world and many of the china decorators

HOW TO PUT ON TRANSFERS.

are using them, retouching them, and changing them in detail, so that no one knows but what they are all hand work.

Take for instance a large transfer, if it is possible to cut apart and rearrange it, you can put it on in pieces, giving an entirely different effect from the original, and if you have had no experience with this work you should put on and have it fired before doing anything else to it, but if you have had considerable practice, you can wipe all the surplus oil off the piece of china where the transfer does not touch, and put in extra painting, then after it is fired you should go over the whole design just as if you had made the entire study with your own hand. You can make the shadows darker by painting over them, or lighter by wiping out some of the color, only if you wish to wipe out any of the transfer, you should wait until it is thoroughly dry, then scratch it off with an erasing knife, then wipe gently over it with a rag slightly wet with turpentine.

Be very sparing with the use of transfer medium, only enough to make the plate tacky is required, a 10c bottle will put on a great number of transfers, and if you find it too thick, thin it with a little turpentine.

After you have applied the transfer medium, very thin, pat it until it is perfectly even and tacky, then lay your transfer down on it smoothing every wrinkle out with your finger, and if you wet your finger slightly and press it down you will find you have better results than any other way. After all the wrinkles are out, lay the china in water until the paper floats off, then take a very soft cloth and press (do not rub now) until there is absolutely no bubbles or rough places. Now let it dry thoroughly, a day is best, then if you will make a lather of "No Blister" and wash gently over the transfer (providing you have no paint on it) being careful not to take any of it off, you will have no trouble about your work blistering.

A FEW TREATMENTS.

WHITE ROSES.—A light wash of grey for white roses is used for the half tones in the petals, washing out and leaving the white china for the highlights. Grey applied heavily is used for the shadows. The centers are lemon yellow retouched with egg yellow and a slight touch of gold grey.

YELLOW ROSES.—The local tone is yellow rose, which may be graduated to a thin wash for the highlights. The darker portions may be retouched with egg yellow, yellow brown and a little in the deepest shadows. A slight touch of brown green is used for the centers.

PINK ROSES.—The local tone is wild rose pink applied thinly, for the darker portions use American Beauty and for the shadows Copenhagen grey. Dark pink roses have a local tone of crimson applied thinly and the darker portions are retouched with ruby purple and Copenhagen grey. To obtain a soft indistinct effect, allow the painting to dry, and before firing powder with pink or rose.

RED ROSES.—Use ruby purple for the local tone, the darker portions are to be retouched with ruby. For the deepest shadows use richest ruby red. Pansy purple is useful for the centers. Before the last firing, dry thoroughly and powder very slightly, with pompadour red.

ROSE LEAVES.—Apple green, moss green and dark green are used for the local tones, for retouching and strengthening use Russian green, brown green and drake neck. Brown green is used for stems and it should be partially overlaid with violet of iron. Warm tones in the leaves are produced with yellow brown and deep red brown, also violet of iron and brown pink green.

BACKGROUNDS (FOR ROSES.)—Copenhagen grey is very useful as a foundation color, pale lilac tones are obtained with violet of gold, yellowish tones with lemon yellow or ivory yellow, warmer yellowish tones with old ivory or yellow brown. Pale green tones are obtained with coalport green, darker tones with apple green, bluer tones with water green. Turquoise blue

or light blue for blue, rose for pink, blood red for darker red, moss green, Russian green and royal green for darker greens.

POPPIES.—Red poppies are painted with poppy red for the local tone, which should be shaded with blood red for the darker tones and violet for the deepest shadows. The centers are painted with brown green, violet and touches of black over violet.

White poppies are made with a thin wash of grey for white roses for the darker shadows use either yellow, Copenhagen grey, or shading grey darkened with grey for flowers. The centers are the same as for red poppies.

Pink poppies have pink rose for the local tone, they are retouched with crimson, ruby purple and in the deepest portions, pansy purple. When yellow is in the background, a touch of lemon yellow in adjacent highlights is very effective.

Poppy leaves are executed with yellow green, dark green, brown green and violet for the shadows. For a background, Copenhagen grey, egg yellow, dark green, violet, yellow green, ivory yellow and pearl grey will make a beautiful combination.

CHRYSANTHEMUMS.—White blossoms are painted the same as white roses, but using Copenhagen grey in the deepest shadows. Pink blossoms are painted with crab apple pink or rose, shaded with crimson, and a touch of egg yellow for the center. For violet blossoms the local tone is violet of gold shaded with lilac and royal violet and in the deepest shadows, pansy purple. The centers are egg yellow and a touch of yellow red.

The leaves are moss green and empire green, shaded with dark green and brown green and touches of violet of iron.

For the background, Copenhagen grey, egg yellow, coalport green, pearl grey; a little yellow red powdered over the yellow will give a fine orange tint and a slight powdering of pink over the Copenhagen and pearl grey will give pinkish greys. Powdering with pink over the pink blossoms and violet of gold over the violet flowers will add to their softness and they may be thus blended into the background.

VIOLETS (single or double.)—The local tone for light violets is lilac and for dark violets, violet. Pansy purple may be used for the deepest shadows and centers, a touch of egg yellow and pompadour red is also used in the centers.

The leaves are grass green, brown green and dark green. In the background, use coalport green, egg yellow, and a little ruby purple, and a little yellow red over the yellows will add warmth.

SWEET PEAS.—The pink blossoms are painted with royal rose, washing out and leaving the white china for the highlights, the deepest shadows are crimson. Yellow blossoms are painted with ivory yellow, the darker portions being egg yellow and touches of yellow red for the deepest shadows. Violet blossoms are painted with lilac and shaded with royal violet. Deep red blossoms are painted with dark red rose and shaded with a little pansy purple. Deep purple blossoms consist of pansy purple shaded with black. The coloring of the leaves and the background is about the same as for violets.

CARNATIONS.—White, pink and red carnations are painted with the same colors as used for roses.

CLOVER.—Pink clover is painted with a wash of American Beauty, the markings are ruby purple and the shadows ruby purple and a little gold grey. Distant clover is made with Copenhagen grey and pink. White clover is painted with pearl grey and strengthened with shading grey. In the last firing touches of white enamel may be used for the highlights. For the light colored leaves use yellow green retouched with grass green and touches of brown green, darker leaves are made with olive green, shaded with dark green and a little brown green; for indistinctness, some of the leaves may be powdered with apple green.

LILACS.—The colorings in lilacs also leaves and background are the same as for violets.

FORGETMENOTS.—For the light blossoms use Italian sky blue, for those of medium tone use turquoise blue and the darker ones use Sevres

TREATMENTS FOR FLOWERS.

blue, the centers are touches of egg yellow and carnation. The treatment of leaves and background is the same as for violets.

GERANIUMS.—For the first firing, lay in the brighter blossoms with wild rose pink and the darker ones with brown pink, wiping out the highlights where necessary. In the second firing the half tones and shadows are made with geranium red, blood red and pompadour red.

The leaves are painted with yellow green, olive green and brown green, the reddish tints in the leaves are produced by blending in crimson, violet of gold, auburn brown and a little finishing brown in the darkest portions.

To obtain softness in the flowers they may be powdered with carnation, using it very sparingly, the darker flowers may be powdered with brown pink. In a warm toned background, the leaves can be powdered with brown pink and pompadour red in order to blend into the background, which may consist of lemon yellow, shaded into egg yellow, yellow brown, auburn brown and dark brown, a little apple green blended into the yellows will add atmosphere.

DAISIES.—Paint the white blossoms with grey for white roses, wiping out and leaving the china for the highlights, for the deepest shadows use a very little Copenhagen grey. The centers are egg yellow, yellow brown and a little hair brown. For yellow daisies use silver yellow, which may be strengthened with egg yellow and yellow brown and for the centers use deep red brown and hair brown. The leaves are similar to poppy.

BUTTERCUPS.—Are painted with goldenrod yellow, the shadows yellow brown and a little yellow red. Leaves same as poppy.

TRUMPET FLOWERS.—The local tone is yellow red, the shadows are carnation, blood red and the deepest shadows a little deep red brown. A little egg yellow may be worked into the highlights. The treatment for leaves is same as for rose leaves excepting that the stems are not overlaid with violet of iron.

FIRE BUSH.—The blossoms have the same treatment as geraniums and the leaves are the same as for roses.

CRAB APPLE BLOSSOMS.—The blossoms are painted with crab apple pink, wiping out for the highlights and shading with Copenhagen grey, the centers are moss green and touches of egg yellow and carnation, the distant flowers are cream rose mixed with a little Copenhagen grey and greater indistinctness can be produced by powdering with cream rose or brown pink. The leaves are the same treatment as rose leaves.

EASTER LILY.—The white china should be left for the highlights and a very little pearl grey worked in for the lighter portions and shading into shading grey, the darkest shadows are brown pink worked into the shading grey, the centers universal green, egg yellow, yellow red, and the shading is dark brown. The leaves and stems universal green, dark green and dark green and the deepest shadows pansy purple over the greens, powdering with pansy purple will give depth to the green portions.

PEACH BLOSSOMS.—The local tone is peach blossom, and cream rose and the darker portions crimson, the shadows are a little ruby purple and the deepest tones for distance in the blossoms, is pansy purple shaded into lilac. The centers are yellow green with touches of auburn brown. The leaves are water green, apple green, moss green and a little turquoise green for the portions with a bluish tinge.

ANEMONE.—The white blossoms are painted with pearl and Copenhagen greys, the centers are egg yellow with touches of moss green and deep red brown. The pink blossoms are painted with rose and shaded with ruby purple, centers same as for the white blossoms. The red blossoms are painted with ruby purple for the first firing, and in the second firing retouched with pompadour red, a thin wash in the lighter portions and applied heavier for the shadows. Being careful not to overfire after painting with the pompadour, this combination will produce the finest cardinal to be obtained.

The leaves are painted with yellow green and moss green, a little brown green and dark green being used for shadows and shading.

TREATMENT FOR FLOWERS, ETC.

GOLD FISH.—The local tone for the fish is egg yellow, the darker tones are yellow brown which is wiped out for the scales, the golden tone is produced by retouching with carnation and touches of blood red, the deepest shadows are pompadour red. Water is produced by washes of pearl grey and water green.

MANDARIN DUCK.—The green feathers are turquoise green shaded with drake neck green. The white breast is painted with pearl grey. The foundation for the brownish feathers is grey for flesh and retouched with finishing brown to which a very little drake neck green is added. The foundation for the neck is brown pink, it is retouched with egg yellow for the highlights and with a wash of ruby purple for the local tone. The shading is gold grey. The beak is ruby purple for the first fire, blood red for the second fire.

BLACKBERRIES are painted with purple grape and pansy purple, the highest lights are violet of gold. Unripe berries are painted with ruby purple, distant berries are lilac, royal violet and ruby purple. The white blossoms are painted with pearl grey, the highlights being wiped out. The centers are brown pink and touches of auburn brown. The leaves are ivory yellow, yellow green, olive green and brown green, the shading is dark green and a little finishing brown. The background contains turquoise blue, Copenhagen grey, egg yellow, cream rose and a little pompadour red applied thinly.

CURRENTS are laid in with ruby purple for the first firing, being careful to wipe out for the light tones. In the second fire retouch with yellow red and pompadour red and touches of chestnut brown for the centers. The leaves are yellow green, turquoise green, olive green and shaded with brown green and shading green.

GRAPES.—Dark grapes should be painted with purple grape, red grapes with richest ruby red and crimson, the lighter tones with yellow pink and yellow brown. The leaves and background require moss green, olive green, Russian green, Copenhagen blue, egg yellow, apple green, brown green and crimson. Retouch dark grapes with royal violet and pansy purple, red grapes with crimson, ruby purple and a little pansy, the deepest shadows are finishing brown. The leaves and background are to be retouched with the same colors used at first and strengthen the shadows with finishing brown, and royal violet.

WILD GRAPES are painted with mixing yellow, yellow green, royal violet and pansy purple, the grapes may be laid in with Copenhagen grey in monochrome for the first fire, giving attention to light and shadow, then in the second and third fires apply the colors and strengthen. The leaves are painted with olive green, brown green, Russian and shading greens, a little chestnut brown and blood red may sometimes be worked in the foliage with advantage.

STRAWBERRIES.—The colors used are yellow, red and pompadour and the seeds are made with touches of chestnut brown, unripe berries are painted with mixing yellow and yellow green shaded into pompadour red. Berries in the background and shown indistinctly may be painted with Copenhagen grey and tinted with yellow and a little pompadour red. The leaves are painted with olive green, brown green, dark green, meissen brown and touches of pompadour red. One can use a background of brown tones such as egg yellow shaded into chestnut brown and darkened with deep red brown in the darkest tones.

CHERRIES.—The colors for red cherries are lemon yellow, Cherry red and blood red, for dark cherries blood red, maroon and a little pansy purple for the deepest tones. For unripe cherries use yellow green and shade it into yellow red. The stems are apple green shaded with violet of iron, the woody stems are brown green, dark brown and a little Copenhagen grey for the highlights.

GOOSEBERRIES are painted with mixing yellow, moss green, olive green and meissen brown in the first painting represent the simple colors and the light and shade, the berries are made with thin washes of color, so that they will have a transparent effect, in the second firing add the detail

such as ribbing the berries and putting on the tiny spines. Indistinct leaves and berries are painted with warm grey, yellow green and a little violet of iron.

CRABAPPLES are painted with lemon yellow, yellow brown, carnation, the centers near the stem are deepened with shading brown, the stems are moss green shaded with shading brown, the woody stems are tuned brown, shaded with shading brown and a little Copenhagen grey for high lights. The leaves are moss green, brown green and a little turquoise green thinly for highlights. The deeper tones are dark green and shaded with gold grey.

DESCRIPTION OF POPULAR AND HIGH GRADE COLORS.

ARABIAN RED is the dark, rich red used by the Arabians too get the beautiful red toned roses.

WILD ROSE PINK, the strongest, reddest pure pink ever made.

ROYAL ROSE, a new, dainty, perfect color for delicate roses.

CREME ROSE, the color of cream tinged with rose and just the thing for shadows, soft, dainty tinting, etc.

EXTRA DARK RUBY. So many want a ruby that is nearly black and without any black color mixed in it. Anglo-French Art Co. have produced this ruby to meet this demand and if fired three coats one over the other it will be almost solid black and should meet your wants perfectly.

RED VIOLET is a new one and intended for the red tones in grapes, pansies and other fruits and flowers where red violet tones are desired.

EGYPTIAN BLUE is the dark, deep, clear, beautiful blue as seen so much on Egyptian art work. No other equals it for richness.

ROYAL VIOLET (Blue) is the darkest, deepest, bluest, richest real violet.

SATSUMA is a shade suggested by Henrietta Barclay Paist as being a magnificent and appropriate color for tints and backgrounds in conventional work.

DRAKE NECK GREEN is the finest green ever offered in America. It is a pure green, soft, clear, dainty in the thin washes and if fired three times, one over the other, it will be nearly solid black.

GOLDENROD YELLOW is the deepest, richest, clearest yellow of gold ever made. It is just as the goldenrods bloom only in dear old Missouri.

ROYAL IVORY is the real ivory tone as suggested by the old rich ivory of an elephant's tusk.

MAHOGANY BROWN is the only brown having the true mahogany tones in its thin washes. It is a red brown and very, very popular.

CLARET RED, which is just the color of Claret Wine.

PURPLE GRAPE, made famous by Jeanne M. Stewart, very fine.

BRUNSWICK BLACK is an intense black used in figure painting, also for shading or mixing. Either of the blacks may be lightened with autumn leaf brown or intensified with ruby or pansy purple.

LINING BLACK is a good glossy black useful in outlining and for mixing with other colors to make them darker, also for shading and is yet black in fine lines or thin washes.

PANSY PURPLE is a beautiful rich royal purple and a splendid pansy color, also for sweet peas and other deep purple flowers.

BLOOD RED is a good bright dark red, very much used in flower painting, for bright touches, and in backgrounds.

POMPADOUR RED is a dark rich red, darker than blood red, and when applied very thinly produces a fine pink. It is used for pink tints in flesh painting, also for the same purposes as blood red.

COALPORT GREEN is a beautiful light green, warmer in tone than apple green and excellent as a background color, either alone or in combina-

DESCRIPTION OF COLORS.

tion with harmonizing colors, of which may be mentioned yellows, browns, reds and greens.

BROWN PINK has a slight brownish tone similar to Meissen brown but pinker and clearer. It is used in shading pinks, also in flowers, foliage and background work.

MATT COLORS are another class of overglaze colors, they are semi-vitrifiable, and when fired do not show any glaze, but are dull yet having a beautiful sheen and are much admired when used in backgrounds, for handles and similar purpuss, ofttimes an entire article is decorated in matt colors and the painting is outlined with delicate lines of raised gold. Gold applied over matt colors produces a beautiful bronze effect if stippled on. Matt colors are also called "gouache" or "Worcester" colors.

MATT ROYAL BLUE is the deepest, richest matt blue.

MATT WEDGEWOOD BLUE, applied light, is very dainty; applied several times, is very deep and rich and the popular shade.

MATT BRONZE GREEN is a deep, rich matt.

SATIN FINISH COLORS.

These satin-finish colors are half-matt; they will not catch and hold dirt; ware decorated with them will stand washing, the light ones are very dainty and pleasing for tints and backgrounds, the dark ones are very rich if grounded on and fired and then again grounded and fired, also grounded on the third time to get extra dark effects, after firing you may apply Liquid Bright Gold over any of them and it comes out of the kiln Roman gold, and over this you may apply lustres such as Ruby, Dark Green, Violet, Red, Dark Blue or Black, and you will get magnificent metallic effects that are new and beautiful. This color may be obtained only of Anglo-French Art Co.

HIGH GLAZING OF CHINA.

If you desire a beautiful, softening, color-blending effect and at the same time a high glaze on your work, you should use some of the glazes. Ivory Glaze, Lavender Glaze, Gray Green Glaze and Azure Glaze, using the glaze that corresponds to the colors you have used in painting the following method is used: Dry the painting thoroughly in a warm oven, and when cool, dust over with glaze. A very thin coating is sufficient. The excess of glaze should be carefully removed with a camels hair brush and the article fired. If the colors fire out too much it shows that the surface was too damp and too much glaze adhered. For the second painting the same plan may be followed. This method gives a beautiful underglaze effect. Decorated china that has been fired may be glazed by giving the surface a thin wash of relief medium, allowing it to stand for about five minutes and should then be well patted with a clean silk dabber. Glaze is then dusted over. A medium firing is sufficient.

ROYAL COPENHAGEN COLORS.

The use of the Royal Copenhagen Colors has become quite popular, they make very artistic pieces. For instance, a straight cylinder vase with a semi-conventional arrangement of daisies with the stems going down toward the bottom, have the background shaded from a Viborg gray at the bottom to a dark shade of Copenhagen slate gray back of the flowers, which should be white, slightly shaded with grey, with centers of Norse ivory. Another good subject is to use a marine scene in the Norse blue and Svenske blue. These colors are also useful in conventional work and for backgrounds.

USEFUL NOTES.

— Gum tape for fastening your design to be traced will be found to be almost indispensable.

Use a steel point when tracing a design.

Paper Stomps, to wipe out high lights, and removing color, correcting outlines, etc., are an absolute necessity in all kinds of painting.

It is far better to buy outline studies with the color treatment than to buy a colored picture and try to copy it.

GLASS COLORS are similar to regular overglaze colors, excepting that the base is softer and they therefore melt at a lower temperature.

There are glass colors called "Cathedral Glass Colors" that do not have to be fired. They are used for stained glass windows, fancy lamp shades, etc. They are very easily applied and wear well.

LIGHT, SHADOWS, TONES, HARMONY.

Warm tones are complimentary to cold tones and the effect of any color is improved by having its complimentary color near it.

Before beginning to paint, remember that wherever white is wanted the china must be left bare, and if light tints are wanted the color must be applied thinner, and if deep coloring is desired the paint must be applied heavily.

If the color fires out too light, it should be strengthened by washing over with some of the pure color. If the work in general is pale or dull it can be brightened by strengthening the shadows and half-tones, and finally washing in the local color. As a rule, shadows should be painted darker than they are to be when fired, as dark colors lose more in proportion than light colors in firing. When a color is too dark it may be corrected by washing over it a contrasting color. For instance, if the pupil of an eye has been made a deep black, it will look like a staring spot and spoil the effect of the painting, but a wash of yellow ochre or yellow brown over the spot will modify the intense blackness by lowering the tone.

In a like manner any color may be modified into other lines by painting over with contrasting or harmonizing colors depending on the effect sought. Thus, a wash of yellow over dark green will make a yellow green; a wash of ruby over black will make a deep ruby. In fact, all colors are greatly deepened by washing them over black or dark grey. It is very difficult, however, to lighten colors. Oftentimes a wash of ivory yellow succeeds, but as a rule it is better to make adjacent colors or the background darker, then there will be more contrast between light and shade.

As a rule, backgrounds should be made to harmonize with the painting.

A flat tint is simply a plain color without variation. Flat tints are used in backgrounds and in conventional work. Any tinting consists of area, contour and tone. Tone does not mean color. It means the intensity or depth of color. Each color has a scale of tones from light to dark. The simplest scale of color value is from white to black, and ordinarily consists of five tones as follows: White, light, medium, dark, black. The scale of color value applies to any color; thus you can have a very dark red, and by successively adding white you can obtain light red and pinks, until it finally passes into white. These differences in color value are the tones of the color. Color tones are often spoken of as shades, but strictly speaking a shade refers to a darkened color, while a tint refers to a color that has been lightened. The word tone covers any hue, shade or tint.

In painting any subject where form is to be shown, it will be found necessary to use tints and shades, because without these you will have a flat tint which will have an area, but will be devoid of the third dimension neces-

sary for modeling and showing form. If you wish to paint a white object it will be necessary to use greys, or if you wish to paint a black object it will also be necessary to use greys. If you wish to paint a red object, it will be necessary to use tints and shades. The shades are most frequently made by adding grey to the red, so, practically speaking, every painting showing form must contain grey.

The color of the reflected light from any colored surface will be influenced by the color of adjoining objects. It will consist of a mixture of whatever color of light falls upon the object with the color of the object itself. In a painting the reflected light will be shown lighter and brighter than the rest of the object.

For instance, a red apple hanging under green leaves will have a greenish light (reflected from the leaves) falling upon it, and light reflected from the apple will have a greyish tint, because red and green mixed produce grey. But if the same apple is out in the open and pure white light falls upon it, it will then reflect a pink tone, because white and red make pink. But if we place a yellow background besides the apple so that a yellowish light falls on it, then it will reflect an orange tint. And so on with any color.

It is customary to imagine a light falling on a painting from some one source, usually from the upper left hand corner. The position of the light is the very first thing to consider in any painting showing form, and after you have determined the position of your light, then paint all your highlights and shadows with reference to the one source of illumination.

In nature all shadows are cast in the same direction and all highlights are produced from the same source. Many otherwise good paintings are utterly ruined by the mistake of overlooking the source of illumination and of putting highlights and shadows in opposition.

Oftentimes a little reflected light is shown from the shadow side of an object, produced by a highlight, reflecting into the shadow. As an example, imagine an apple hanging so that light falls upon it from above, and underneath the apple is a bunch of leaves, also receiving the same light. Now the light falling on the leaves may be diverted upwards and reflect on the underside of the apple, giving a reflected light in its shadow. Such a reflected light is usually shown in a painting by a narrow light line. It will make the object stand out, giving it solidity and a stereoscopic effect.

While highlights and reflected lights are somewhat similar, it is more accurate to say that a highlight is the effect of the principal light falling upon an object. The reflected light is the light thrown from one object to another. Unless reflected lights are shown in a painting it will be devoid of sufficient perspective. The painting will be without merit, being flat and without life and form.

It is equally as important to have shadows in their proper positions, as they also give perspective and solidity to a painting. The shadow produced by the sun is usually a grey such as may be produced by the mixture of white and black, but shadows are greatly influenced by the color of any colored light that is reflected into the shadow.

In china painting the proper shadow tone can be secured by mixing violet and grey for flesh.

The proper china colors to use in painting various colored subjects.

WHITE.—For the local tone give a thin wash of pearl grey or silver grey. Pearl grey is used for blue-white objects, while silver grey is used for greenish-white objects, such as white roses and similar white flowers. For white objects of a slightly yellowish tone, ivory yellow is used, but it is applied only in a thin wash. The shades are the same colors applied a trifle heavier and the deepest shadows are produced with grey for white roses. The highlights are shown by the white of the china. But if the painting is influenced by colored light falling upon it, such as green from adjacent foliage, then a slight tint of that color should be represented wherever it falls upon the subject. As a rule, such color reflections are represented by slight touches of color, rather than by washes.

YELLOW.—The local tones may be any yellow most suitable for the subject. The shades will be made by adding warm grey, or grey for white roses.

The deeper shadows are autumn leaf brown or yellow brown or a darker brown, depending upon the amount of depth required. The highlights are either the white of the china or a wash of ivory yellow.

BROWN.—The local tone should be a shade of brown suitable for the subject. The brown can be greyed with grey for flesh and the shadows dark brown, shading brown or finishing brown, depending upon the local tone used. The highlights would be old ivory or autumn leaf brown.

BLACK.—The local tone will be modified by the addition of autumn leaf brown for warm tones and violet for cold tones. The shadows will be ruby, which intensifies black. Highlights are usually represented with autumn leaf brown, but a grey, such as grey for white rose or Copenhagen grey, is often used, and, in a few cases, violet is used.

PINK.—The local tone is any suitable pink. For light pinks, pink rose is used, and for medium pinks, crab apple is the right shade. For dark pink or American beauty roses, crimson is used. The pinks can be greyed with grey for white roses, and may be deepened with deep violet of gold or ruby purple. The highlights are the white of the china or a thin wash of the local tone.

RED.—The local tone will be sunset red for a light red. Carnation is a medium shade and blood red is the darkest red. They can be greyed with gold grey and shaded with deep red brown. The highlights will be a thin wash of the red used for the local tone.

RUBY RED.—The local tone will be either ruby purple or ruby. These are the colors used for painting dark red roses. They can be greyed with gold grey and deepened with a finishing brown or black. The highlights are produced with a thin wash of the local tone.

BLUE.—The local tone will be light blue, turquoise or sevrès blue for light shades, and Egyptian or banding blue for darker shades. Shading and Copenhagen blues are very dark. They can be greyed with grey for flesh. The light blues are shaded or deepened with the darker blues and the dark blues are deepened with black. The highlights are a thin wash of the local tone.

GREEN.—The local tone will be light, medium or dark green, according to the subject to be painted. The lighter greens are deepened with darker greens. Any of the greens can be greyed with brown green or with grey for flesh. The highlights are thin washes of the local tone. Deepest shadows in dark greens are made with black green.

SHADOW UNDERTONES.—Wash in the drawing in monochrome for the first firing, using copenhagen grey or warm grey. The highlights are left clear and prominent and the shadows are worked in so that the painting looks like a photograph would. Just the design in grey and white, but all fine detail is left out. The principal object is to get all the main highlights and shadows in the first firing. Then the second firing consists in tinting or coloring the grey monochrome, the grey forming undertones and the shadows. Only the deepest shading has to be added in the second firing.

This method enables one to get freshness of coloring not easily obtained in the usual way, which consists of mixing greys or black with the colors for shading.

In nature the shadows are very transparent and any colored light thrown into a shadow shows very distinctly, but in china painting if we attempt to place a shadow color over other colors, it is likely to change the color considerably, because the china colors are not completely transparent. Thus a strong wash of grey for flesh over a yellow would be sufficient to cover the yellow entirely. So, often in shading colors, it is customary to use a darker color instead of a pure grey. In the case of the yellow a darker yellow will form a shadow for a lighter yellow, or the lighter yellow can be shaded by using grey very thinly, but even then it is likely to lose its purity of yellow tone.

It is best to paint light rather than too dark, because it is easy to strengthen a color, but very difficult to lighten a color. The only way to apparently lighten a color is to place a darker color beside it. Contrast of

light and dark is thus effected. Black placed beside a color will produce the greatest contrast, while grey placed beside a dull color will often brighten it.

Sometimes it suffices to place a wash of contrasting color over a color to lower its tone and produce a grey or weakening effect if the color is too bright, but in cases where the color is dull or weak it can be brightened by washing over it a color of the shade desired. White placed beside a color apparently brightens and strengthens the color. Black beside a color will apparently make it appear duller and weaker.

One china color may be readily changed into another shade by washing one color over another, but each color must be fired separately. Some of the most beautiful shades are produced in this manner. Shadows are usually painted a little darker than they are to be after fired, as they often lose some in firing.

CONTRAST AND HARMONY.

CONTRAST AND HARMONY.—The greatest contrast is black and white. In colors, red contrasts with green, yellow contrasts with violet, and blue contrasts with orange. But light red and dark green offer greater contrasts than light red and light green would. And so with all other colors, a light color contrasts with a dark color. Light colors will harmonize, or dark colors will harmonize in tone values.

The three primary colors, red, blue and yellow, are most nearly represented in china paints in ruby purple, sevrès blue and mixing yellow. Any two of the primary colors result in a secondary color. Thus, blue and yellow make green; red and yellow make orange, and red and blue make violet. The secondary colors can be mixed to form tertiary colors and so on. The law of contrast is based on the three primary colors, opposites being the contrast. Thus, a color containing two parts blue and one part red would be a blue violet, and the proper contrast would be the equivalent proportion of the opposite colors, which would be one part red and two parts yellow. This completes the color scheme, making the amounts of each color equal. The first color is 2 blue, 1 red. The contrast is 1 red, 2 yellow. If you add all together it makes 2 of each color. The red and 2 yellow is equivalent to a yellowish orange tint.

This rule holds in any contrast that you may want to effect. Say you have a green and it is a yellow green and you estimate that it contains about 3 parts of yellow and 1 part of blue; the contrasting color will contain 2 blue and 3 red. This will be a reddish violet.

In china paints a few contrasts are: Wild Rose pink and apple green; light blue and a thin wash of sunset red; banding blue and yellow red; violet and egg yellow; lilac and lemon yellow; coalport green and pansy purple.

WHITE.—Contrasts with dark colors and harmonizes with light colors.

YELLOW.—Contrasts with dark colors, the greatest contrast being with dark violets, blue or green. Yellow harmonizes with light colors, especially those containing yellow or red, such as autumn leaf brown, yellow brown, orange, light red, etc.

REDS contrast with colors containing green, blue or black and harmonize with colors containing white, yellow or red.

BLUES contrast with colors containing yellows or reds and harmonize with colors containing blue or black.

VIOLET and purple contrast with yellows, greens and white and harmonize with colors containing reds and blues.

ORANGE contrasts with dark colors containing blue or black and harmonizes with light colors containing yellow, brown or red.

GREEN contrasts with colors containing red and harmonizes with colors containing blue or yellow. Bluish greens are called cold greens and yellowish greens are called warm greens.

GOLD contrasts with dark colors and harmonizes with light colors, the best harmony is white, the least harmony is yellow. The best contrast is

pansy purple, shading green, shading blue, shading brown, black or with colors of similar tones.

SILVER harmonizes with light colors. The best contrast is blue.

BACKGROUNDS.—In naturalistic flower painting it is customary to paint the background in tones that harmonize with the flowers and foliage and touches of complimentary colors to add life to the painting.

In conventional work the same general rules hold good, but often the complimentary colors are used instead of harmonizing colors, the object being to obtain contrast in coloring. Conventional work in flowers often looks exceedingly well done in grey, using Copenhagen grey for the foliage in the background; the flowers done in lilac, shaded with grey for flesh; foliage done in silver grey, deepened and shaded with grey for flesh; foliage done in silver grey, deepened and shaded with grey for flesh. A little Copenhagen blue can be worked in the background at the bottom or top of the composition, being carefully blended into the Copenhagen grey, and for the last firing ground the entire surface of the painting with a thin coat of grounding oil, pounce evenly and almost dry, then let it stand for an hour or so and dust with Copenhagen grey and fire. The result will be an underglaze effect in greys, and if well executed will make an attractive and desirable painting.

The following suggestions indicate the colorings to use for various general subjects: Thus, white roses, white lilies or white flowers of any kind would all be treated in a similar manner as far as a harmonizing background is concerned, so, in these suggestions we class the subjects to be treated as white, yellow, pink, red, blue or violet and green.

WHITE.—The flowers being white, they are usually shown by pale greys, and a good harmonizing background would be ivory yellow and old ivory into which may be blended a little light blue, some coalport green and to represent distance some violet of gold applied thinly to give a pale lavender shade. In the lower part of the painting, if there is any foliage, it will be represented with yellowish greens shaded with brown green, and a suitable background in this portion of the painting will be greens and brown green in light tones worked in more or less indistinctly. Moss green, yellow green, yellow brown and meissen brown are colors that can be used.

White also looks well with a background consisting of a plain grey, such as Copenhagen grey or warm grey, or Copenhagen grey can be used for the foundation mixed with a little gold grey to darken it, which will give a slightly brownish grey and a strongly contrasting effect. White chrysanthemums, under these conditions, show off with splendid effect. Other white flowers would be made to stand out prominently with the same treatment.

YELLOW.—Backgrounds for light yellows will be similar to those used for white subjects. For darker yellows, such as egg yellow, and shades approaching orange, we would suggest a background consisting principally of Copenhagen grey, which should be in a plain, flat tint and put on rather thinly so as to give a delicate bluish grey. This background alone will make yellows stand out strongly, but by washing in some wild rose pink near the subject will change the grey to a pinkish tint and be less contrast.

A cloudy effect can be obtained by using pink in portions of the background and alternate or mix in with some light blue; thus you will have bluish, violet, lavender and pinkish tones over the light Copenhagen which would show through in a part of the background. The pinkish tones can be blended into a darker tone with brown pink and a little lilac over the brown pink will deepen the tone. Adjoining these pinkish greys, a little cool grey, such as pearl grey, worked over the Copenhagen undertone, will prove very effective in adding life to the background.

In certain subjects of yellow where considerable foliage is shown, it is well to use Copenhagen blue applied thinly so as to give a greyish blue tone rather than a pure blue tint. Moss green can be blended into the bluish grey tint, and from moss green into brown green and darkened with gold grey. This treatment gives a scale of coloring from a grey blue tint through green into a harmonizing brown shade. Violet of gold worked into backgrounds

troducing the complimentary color, and adds greatly to the general color combination. A little touch of bright yellow in the background of a yellow subject, is often very effective.

PINK.—The flowers or subject will be pink in light or dark shades with highlights almost white, the best harmonizing color being ivory yellow or old ivory, which may be blended into yellowish brown and into yellow green. The foliage will contain green, usually very yellow in tone, shaded with moss green and a little brown green. A little egg yellow, tempered with yellow brown, can be added with advantage.

For the lighter tones in the background, usually at the upper portion of the composition, may be pale lilac tint made by blending a little violet of gold into the ivory tints and some indistinct foliage or flowers may be worked into same, being shown by greys partaking of the same color as the surroundings. In the darker portion of the background use yellow brown, and it may be deepened or shaded into gold grey and some brown green to modify the tones, the heavier portions of the foliage being thus enveloped; or the foliage may be partially hidden in a distinctly greenish background.

To have the pink subject stand out prominently it should be surrounded by dark or contrasting colors. Thus a pink rose would show up strongly from a dark bluish green background. This could be gradually blended into a deep blue green and finally into a light blue. Or the deep bluish green may be blended into brown green, then into yellow brown, which may be powdered with pink or crimson, giving a ruddy glow. If you want considerable effective coloring in the background you can start with green, blend into deep blue green, then into light blue, then into apple green, then into yellow brown, then into old ivory. Of course the arrangement of this scheme of coloring will depend upon the composition and the shape of the china. All of the foregoing colors would have to be applied lightly, as a heavy background would not harmonize with pink as well as a lighter background, but the deeper the shade of green near the pink subject, the stronger would be the contrast and the more the pink would stand out.

A plain background for pink is one that consists largely of ivory shades, or silver grey slightly deepened with Copenhagen grey would make a fine plain background for pink. To get a color scheme, the silver grey could be blended into apple green, then into brown pink, and then into brown green and browns, or, instead of browns, dark greens could be used.

RED.—A good harmonizing background for reds, such as carnation, blood red, pompadour, etc., will be as follows: The lightest tones will be a thin wash of lemon yellow, which is blended into mixing yellow, egg yellow, yellow brown, violet of iron, dark brown. Or, you can start with a thin wash of lemon yellow; blend into a mixing yellow, then into a yellow brown, and finally powder with a little apple green over the yellows, which will give grey tones which can run into greens if green foliage is shown in the composition.

Contrasting backgrounds for reds may be light or dark. An example of a light background would be lemon yellow, slightly modified in places with a deeper tint of lemon, or with silver grey worked in. A dark background is one consisting of greens, which should start with coalport green and shade into apple green or yellow green; then into moss, olive and darker greens. Powdering some portion of a green background with Copenhagen grey will change the tone and relieve the effect of too much green, or greens can be blended into Copenhagen grey and thence into a pale greenish blue. Greyish blues can be blended into brown green, then into browns.

BLUE OR VIOLET.—The principal subject would be painted with turquoise blue, lilac, violet or pansy purple, but the following suggestions will refer to almost any shape of blue or violet. An example of a harmonizing background is to start in the lightest portion with a thin wash of Copenhagen grey, shading into light blue, thence into Italian sky blue and shading blue or into violet or violet for grapes in tones similar to the principal colors used in painting the subject. A bluish background may be clouded

PROPER COLORS TO USE.

by powdering a portion with pink, which will give a beautiful warm tone.

Another scale of coloring, starting with a thin wash of Copenhagen grey, is to graduate the Copenhagen from a pale to a darker tone, then blend in a little lemon yellow, allowing some of the lemon tint to show almost pure, from thence into yellow brown (thin wash) upon which is a very thin dusting or powdering of deep violet of gold.

For a subject painted in light blues or violets, a plain ivory background with a little yellow worked in and a little sunset red, just sufficient to give a faint orange tone, will bring out the subject strongly by color contrast. A little sunset red in any composition containing blue or violet will add life to the painting, but only a very little should be used, and it must be applied thinly to give an orange tint.

A background consisting largely of yellow tones may be modified by powdering with yellow brown and by using a little sunset. Such a background can be deepened with gold grey and also with brown green where necessary to blend into foliage.

In any of the backgrounds for blue or violet subjects, the use of violet of gold powdered over ivory or over thin Copenhagen grey will give a fine soft effect and will also act as a basis into which almost any color scheme can be started. Rich deep backgrounds can be made by blending violet and pansy purple into violet of gold, or from Copenhagen grey blend into violet of gold, then into violet and into blue, then into Copenhagen blue or black. From blue it is easy to shade into dark greens.

GREEN.—It is customary to paint greens with considerable latitude in coloring, especially in flower painting, and as a rule the greens in a composition are secondary to the principal subject; but there are cases where green is the subject, for instance, hops. The highlights in hops will be silver grey, or pearl grey. This will be graduated into moss green for the local tone, and the deeper shadows will be dark and shading greens. The leaves will be similar in coloring, with yellow green in the lighter portion and highlights of silver grey. A light background for hops or similar green subject will be ivory yellow, shading into silver grey; thence into Russian green, then into turquoise green. For a warmer toned background, yellow brown or chestnut brown can be worked in, preferably over the greens so as to give warmth to the greens and greyish tones. A very little orange or a few reddish tones used somewhere in the background will add effectiveness.

A darker background will consist of Copenhagen grey applied moderately heavy so as to give a solid color, and clouded effect can be secured by powdering over the Copenhagen with violet of gold for warm tones, or with Italian sky blue for sky blue tones, and a touch of pink with the blue adds color harmony. For a greater variety of coloring, coalport green can be blended into the blue tint and the coalport can be shaded into moss green; thence into the subject. Shading and brown green may be used in the deeper portions of the background and subject.

In some cases greys go well with greens, thus green foliage may be shown with a strong light falling on it. The high lights will be almost as neutral in tint as warm grey, in fact, that could be used and grey for flowers tinted with moss could be used for the local tones. The background would be a mixture of silver grey and warm grey, while it and the foliage could be gradually blended into turquoise green and deepened with black green and brown green, and the subject and background should afterwards be powdered with silver grey, which will unite the greys and greens to make a harmonious grey-green coloring scheme.

Distinctly warm tones may be worked into backgrounds with green subjects, especially if the subject is a warm green, the tint would run from a coalport green into yellow green, then into yellow brown, then into brown green and finally into gold grey or dark brown. A touch of blood red will add effectiveness when applied in the browns.

SELECT SIMPLE THINGS TO BEGIN.

In china painting select easy subjects at first, such as forget-me-nots, pink wild roses, poppies and single violets. There are two methods of painting. One is to wash in the local color in a flat, even tint for the first firing, the general form being indicated, but no attention being paid to the shading or modeling.

The other method is to do all the modeling in grey tones, Copenhagen grey, warm grey or brown green applied thinly being used, and no local color is applied until after the first firing. In the latter method one simply paints as nice a monochrome of the composition as possible having clear high lights, but the grey used must bear some relation to the coloring of the subject. For delicate tints, the greys must be used very thinly so that a thin wash of the local color in the second firing will supply the necessary coloring. The grey will show through enough to form the necessary shadows. If the grey has been applied a little too heavily, then the color must be applied a little heavier, which will counteract a too grey appearance.

In the first method, after the flat tints have been fired, the design is modeled with grey tones, more of the local color being used where necessary, and the subject is built up from the flat tint.

You should draw the design in India ink first, then apply the colors.

In painting, the brush should be used with firmness and decision. Make each stroke count. Do not dabble in the color after it has been laid on the china. If you do not get it on the china right at first, it is best to wipe it off and try until you get it right. One requires practice in china painting.

IMPORTANT SUGGESTIONS.

Relief enamels should be reserved for the last firing, as repeated firings may cause them to scale.

Pinks or rubies, when underfired, are apt to appear yellowish or brownish in tone. If overfired they take on a bluish or violet tinge.

Colors that are underfired are without glaze, have a dirty appearance and sometimes can be rubbed off.

China that has been in use will not fire successfully, because it is liable to fire with black spots showing under the glaze, often ruining the article, or it may crack, craze or chip.

The proportion of mixing oil to powder colors is about equal parts, and should be mixed to form a soft creamy-like mass thin enough so that it will flow from the brush readily, and just thick enough so that when placed on the palette it will not spread.

Oil of cloves is a slow drying oil and is often used to keep colors open a long time, especially when painting large pieces, a little is added to the mixed paint. But china that has been painted with it must be thoroughly dried in an oven before sending to be fired, otherwise the colors may run in firing.

Some painting mediums cause the colors to dry out glossy on the china before firing. Such oils gather dust and may cause the paint to blister in firing.

Peaches, plums, grapes and other fruits exhibit a bloom on the surface that is often very difficult to reproduce in a painting, but it is best shown by a very thin line of Copenhagen grey on the upper edge of the fruit to give the fuzzy appearance of the natural bloom.

The use of large brushes enables one to work quicker and easier as soon as they get accustomed to them. Small brushes get one in the habit of working in a mincing manner and quite impossible to get broad, bold strokes or even tints.

HOW TO STACK THE KILN FOR FIRING.

Brushes with comparatively long handles are an advantage and when working with them hold them as far away from the point as possible, which will give freedom of touch and ease in working, and will add speed and character to the work and does away with any crampy effect.

NOTES ON FIRING.

Before firing china it is well to see that it is dry and free from dust. Any particles can be removed with a dust needle. When oil of cloves or other slow drying oil has been used in painting, it is advisable to dry the china in an oven before firing. If a brown discoloration shows from oven drying, it will disappear in the firing.

Often the back of the china is full of finger marks which may fire in and should be removed, leaving the china clean for firing. Use "Cleanso."

When painted china has been packed in cotton before firing, simply remove all the cotton possible by gently rubbing it off. The little lint that remains will burn away and not show after firing.

China tinted by the dusting method should be carefully dusted off with a camels hair brush so as to remove all excess of color.

If a kiln has stood for some time, or if the weather has been damp, it is best to warm the kiln so as to dry it out thoroughly before placing the china in it for firing. A damp kiln will prevent the colors from glazing well.

Place the largest china at the bottom of the kiln; separate the articles by means of stilts. The stilt can touch the decoration provided the color is not painted on heavily. The point of a stilt will stick to heavy color, making a bad place in the china, but does not harm over light tinting.

Plates may be laid one over the other if separated with stilts. The best method is to use three smallest size stilts between each plate. A high stack of plates will then have no tendency to tip over, as it sometimes happens when only one stilt is placed between.

Plates may also be set on edge. Cups, saucers and other small articles may be placed in the kiln promiscuously, upside down, on edge, or any way most convenient, but it is necessary to separate the articles with stilts so that the china articles do not touch each other, and it is also necessary not to wedge them in any manner, because china expands in heating and ample allowance must be provided for expansion and contraction, so it will not break in firing.

Tile should always stand on edge. It and belleek ware should always be carefully fired. The firing should start slowly at first and the kiln should be cooled after firing as slowly as possible, as too rapid heating or cooling will cause the glaze to craze.

If the kiln has shelves, stack until nearly the height of the first shelf, then begin stacking china on the shelf, beginning about the same as in the bottom of the firing pot.

When the kiln is stacked it must be closed ready for firing. Kilns have a pipe at the lower part of the firing pot to admit air and in the cover a peep hole, so that when the kiln gets hot a circulation of air passes through the firing pot, allowing all smoke and gases to pass away. The slower kiln is cooled the better, as that anneals the china and will render it less susceptible to chipping or breaking in handling.

Firing with different fuels is approximately the same. In all cases start the fire low so that the kiln will heat up slowly. When the firing chamber gets red hot the fire may be increased and allowed to heat until the desired temperature has been reached. From 700 to 850 degrees centigrade is the proper heat, and it may be readily determined by using firing tests, placing one on an old bit of china and in the kiln where it can be seen from the peep hole. When the test melts down flat it indicates the proper temperature and the firing is then sufficient. The kiln must stand until thoroughly

HOW CHINA MAY BE RUINED IN FIRING.

cooled down. Over night is best. Close all drafts and dampers so as to facilitate slow cooking.

itate slow cooking.

Raised paste and enamels should be thoroughly dried before placing in the kiln. Any paint or enamel that looks bright and oily is liable to blister in firing. Drying it out in an oven until it looks dull may prevent blistering.

Underfired gold is dark and unsatisfactory in color, but sometimes gold comes out dark and will not burnish. It is because the brush for laying it was not clean. Gold applied too thinly will rub off after firing.

Sometimes china will break in firing. This is usually caused by too rapid heating of the kiln or too rapid cooling. Overcrowding the kiln is also a cause. Some colors, if applied very heavily, may scale after firing. This is caused by too hard a fire and too rapid cooling, and sometimes happens if the china is taken from the kiln while it is still warm. China is not annealed until it gets perfectly cool. If you take a piece of decorated china from the kiln while warm and hold it near you rear, you can often hear it crackling and crazing and if the color is on heavily you can hear it loosen from the china. It may not chip off right away, but it becomes loosened and will scale off sooner or later.

To maintain a high temperature in a kiln for any length of time is unnecessary and may spoil the glaze, because colors contain volatile fluxes which gradually evaporate at a high heat and after a time would leave only the infusible portions of the colors and would result in a matt color.

It is a mistake to try to fire by any certain length of time, as the draft, atmospheric conditions and fuel feed may vary from one time to another. The correct way is to heat the kiln until the colors melt, and when that point is reached, discontinue the fuel and allow the kiln to cool down as slowly.

An experienced firer can tell by the appearance of the paint on the china when it has melted, because it looks brighter than the rest of the china. It seems to be hotter and sometimes has a glistening or wet appearance that indicates that the color has melted and formed a glaze that reflects the heat better than the china.

HINTS ABOUT LUSTRES.

Most lustres will keep indefinitely if kept in well-stoppered bottles and in a dark, temperate place. Before using the bottle should be well shaken until all sediment is mixed in, otherwise the lustre is apt to fire pale and unsatisfactory.

It is most important that the brushes be perfectly clean and not used for any other purpose.

Failure more frequently occurs from improperly cleaned brushes than from any other cause.

It is advisable to have one brush for each lustre, otherwise wash the brush thoroughly after each lustre. First wash well in turpentine several times until fresh turpentine does not become discolored from the brush. Then dry the brush and wash it thoroughly in alcohol until clean alcohol does not become discolored, then again dry until the brush becomes fluffy.

Unless brushes are thoroughly washed as above described one cannot expect to have good results, as the slightest trace of one lustre may ruin another lustre.

The china or glass to be decorated must be perfectly clean and free from finger marks. After washing and drying the china in the usual way, wipe it with tissue paper and alcohol, and polish with clean, dry tissue paper, being very careful that there are no particles of lint remaining on the china.

It is essential to have the china and the lustre of the same temperature as the room, and this should be about 70 degrees, as lustres are apt to work

irregularly if too cold or if too warm, and the best results are when the air is dry.

As a rule it is advisable to apply lustres thinly and as evenly as possible, and where a perfectly even coating is desired the lustre may be pounced with a silk dabber. If the lustre dries too rapidly a little thinning essence may be added to it and the dabber may be dampened with essence. This will admit of large surfaces being pounced evenly.

If lustre is applied too thickly the normal brilliancy will become impaired and the lustre may fire dull and grey; if the lustre is too thick to be applied evenly, it should be thinned with essence. Two or three thin coats fired separately will be much more effective than one heavy coat. Each coating of lustre must be fired before applying the next coat and each additional firing increases the beauty of the lustre.

While applying and drying lustre decorations use the greatest care to avoid dust, as it will cause a spotted appearance after firing.

In covering large surfaces with lustre use a square shader of medium or large size, have the brush well filled with the liquid lustre and mop it over the surface as quickly as possible, having a silk covered dabber in readiness to pounce the lustre until it is even and almost dry, but take great care not to pounce the lustre after it becomes tacky, as that will cause it to fire with dark spots.

The various opal and mother-of-pearl lustres do not require pouncing; they are much more beautiful if applied unevenly; very striking effects may be produced by applying these lustres with a cork, using the cork as a stippler. If closely stippled it will produce a finely intermingled iridescence, and the coarser the stippling the more gorgeous will be the iridescence. Care must be taken not to apply the lustre too heavily, but with a few trials one can arrive at about the right application to obtain splendid results.

In firing lustres special care must be taken to have the work dry before placing it in the kiln; after the lustre has been air dried it is good practice to place the ware in an ordinary oven, leaving the oven door partly open and allow the ware to become hot; then let it cool very slowly. This will drive off some of the oils and other volatile substances and be less liable to smoke in the kiln.

The kiln must be perfectly sound and dry and the firing must proceed slowly at first, so that the oils may be driven off gently, and all fumes and smoke must be allowed to escape before the kiln gets too hot, as the smoke is injurious and may cause the lustre to fire dull and also to rub off easily after firing.

If the kiln is heated up too rapidly the lustre will rub off after firing.

Should lustres fire unsatisfactorily their tone may be changed, and often serious defects can be remedied by covering with mother-of-pearl and again firing.

But lustres that rub off after being fired should be entirely removed, sometimes they can be removed by washing with Cleano.

Lustres will stand several firings providing the kiln is sound and affords a ready exit for the gases that are formed in firing.

Gold, colors, enamels or raised paste can be used over fired lustres, and raised paste can be used over unfired lustre if necessary to save a firing. It is best not to use colors over lustres if it can be avoided, as there are cases when the results are highly unsatisfactory, and we do not recommend such procedure.

Gold can be used under a lustre or over a lustre. When under a lustre the effect is very beautiful in certain cases.

Blemishes in lustre decoration are sometimes covered by tracing fine lines or dots of Roman gold over the surface.

Lustres are best adapted for conventionalized designs. Raised gold work is very effective for outlining lustre designs, but there are cases when plain outlining black is preferable to gold. The black has the advantage of being less expensive and if neatly executed it is more attractive than gold work.

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